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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/449,034	11/24/99	BOK L	4865/49-BFG1

000757 PM82/1001
BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO IL 60610

EXAMINER	
BURCH, M	
ART UNIT	**PAPER NUMBER**
3613	12

DATE MAILED: 10/01/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/449,034	BOK ET AL.	
	Examiner	Art Unit	
	Melody M. Burch	3613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2001* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claim 6 is objected to because of the following informalities: in line 4 of claim 6 the phrase "an available wear portions" should be changed to --an available wear portion--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 6 and 8-10 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claim 6. Claim 6 recites the limitation "said brake disk" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6 and 8-16 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Canadian Patent CA-2004091 in view of Bok '895.

Re: claims 1, 4, 5, 6, 8-11 and 13. CA-2004091 shows in figures 1 and 2 a brake disk assembly comprising an end plate 4, a pressure plate 5 and initially brake disks R1-R4 and S1-S5 axially aligned and disposed therebetween, wherein the brake disks comprise disks of three different wear portions whereby disks of a first thickness S1, R1, R2 (thickness = E+4e) have an initial wear portion (4e), disk of a second thickness S3 (thickness = E+3e) have approximately two thirds (3e) of the initial wear portion of the first thickness disk, and disk of a third thickness S5 (thickness = E+e) have approximately one third (e) of the initial wear portion of the first thickness disk, the brake disk assembly including disks of a first, second, and third thickness, whereby at an overhaul the available wear portion of the first thickness disk is approximately equal to the initial available wear portion (3e) of the second thickness disk, and the available wear portion of the second thickness disk is about equal to the initial available wear portion (e) of the third thickness disk, and the available wear portion of the third thickness disk is substantially fully worn, whereby the third thickness disk is removed and replaced with disk of a first, second or third thickness as disclosed from the last paragraph on pg. 3 to the end of the first full paragraph on pg. 5 of the English translation, but does not disclose that the ratio of the initial available wear portion of the second and third thickness disks are exactly 2/3 and 1/3 of the initial available wear portion of the first thickness disk, respectively, and does not show in the two figures that the second and third thickness disks each comprises a plurality of disks.

Bok '895 teaches in col. 5 lines 40-42 that the thickness of the wear portions may be varied to obtain certain advantages provided by the embodiments - one advantage

being piston travel. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the available wear portions of the second and third thickness disks of CA-2004091, in view of the teachings of Bok, to have been exactly 2/3 and 1/3 of the initial available wear portion of the first thickness disk, respectively, or any other appropriate ratio as determined by routine experimentation in order to optimize system performance by utilizing the appropriate thickness discs to achieve the desired performance results.

CA-2004091 teaches in figures 1 and 2 the use of a brake structure of a first thickness comprising a plurality of disks S1, R1, R2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the disk stack of CA-2004091, as taught by the disks of a first thickness of CA-2004091, in order to provide a means of increasing the braking capacity of the assembly.

Re: claim 2. CA-2004091 shows an actuator 3 in figures 1 and 2.

Re: claims 3 and 16. CA-2004091, as modified, teaches the use of a plurality of rotors and stators in figures 1 and 2. It would have been obvious to one of ordinary skill in the art to have constructed the brake assembly of CA-2004091, in view of the teachings of CA-2004091, with a varying number of rotors and stators depending on the amount of braking force required which would be based on the type of aircraft in which the brake would be used.

Re: claim 12, 14, and 15. Bok '895 teaches in figure 4 the use of a pressure plate left side 48 and an end plate right side 48 which also comprise brake disks. It would have been obvious to one of ordinary skill in the art at the time the invention was

made to have modified the brake assembly of CA-2004091, as modified, to have included a pressure plate and an end plate comprising brake disks, as taught by Bok '895, in order to provide increased braking capacity. Bok '895 also teaches in col. 5 lines 40-42 that the thickness of the wear portions may be varied to obtain certain advantages provided by the embodiments - one advantage being piston travel. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the available wear portions of the pressure plate and end plates comprising brake disks of CA-2004091, as modified, in view of the teachings of Bok, to have included available wear portions of differing or specifically two times the thickness of the other or any other appropriate ratio as determined by routine experimentation in order to optimize system performance by utilizing the appropriate thickness discs to achieve the desired performance results.

Response to Arguments

6. In view of the teachings disclosed in the Canadian reference FR-2004091 cited in the supplemental IDS filed 6/14/01, new rejections have been established. Accordingly, the finality of the previous action has been withdrawn. Not that this current action is final since the supplemental IDS was filed without a certification. The amendments set forth in the after final amendment filed 9/17/01 define over Bok'895 since brake disks of three different wear portions are not initially or simultaneously axially aligned and disposed between the pressure and end plates. The amendments, however, do not define over FR-2004091 in which disks of three different wear portions are initially or simultaneously axially disposed between the pressure and end plates and in which the

worn third thickness disks are replaced with disks of a first thickness (one of the alternatives claimed in the limitation "replaced with disks of a first, second, or third thickness"). As discussed in the interview on 8/20/01, Applicant is advised to provide more specific claim language with regards to the pattern of brake disk replacement. For example, in figure 2 of the instant application disks R1 having a THICK thickness in Run 1 are replaced with disks of a THICK thickness in Run 2 and are not allowed to be worn down to the MED thickness as shown with disks PP. Such replacement strategy is not taught by the prior art.

7. In order to complete the record, it should be noted that no conflict appears to presently exist between the subject matter defined by the instant claims and the subject matter of the claims of applicant's and/or assignee's copending application no. 09/449033. Accordingly, no double patenting rejection is entered into the instant application. See MPEP 804+ concerning double patenting type of rejections, if necessary. Applicant and/or assignee should maintain this clear line of patentable distinction between the instant claims and the claims of the indicated patent application.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Oberleitner can be reached on 703-308-2569. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

mmb
September 28, 2001

9/28/01

ROBERT J. OBERLEITNER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600